

## Submitted, Discussion or In press

109. VandenBoer, T.C., C.J. Young, R.K. Talukdar, M.Z. Markovic, S.S. Brown, J.M. Roberts, and J.G. Murphy, *Nitrous acid reactive uptake and displacement connects nocturnal loss and daytime source*. Nature Geosciences, 2014. submitted.
108. Kim, S., T.C. VandenBoer, C.J. Young, T.P. Riedel, J.A. Thornton, R. Swarthout, B. Sive, B.M. Lerner, J.B. Gilman, C. Warneke, J.M. Roberts, A. Guenther, N.L. Wagner, W.P. Dubé, E.J. Williams, and S.S. Brown, *The primary and recycling sources of OH during the NACHTT-2011 campaign*. J. Geophys. Res., 2014. submitted.
107. Young, C.J., R.A. Washenfelder, P.M. Edwards, D.D. Parrish, J.B. Gilman, W.C. Kuster, L.H. Mielke, H.D. Osthoff, C. Tsai, O. Pikelnaya, J. Stutz, P.R. Veres, J.M. Roberts, S. Griffith, S. Dusanter, P.S. Stevens, J. Flynn, N. Grossberg, B. Lefer, J.S. Holloway, J. Peischl, T.B. Ryerson, E.L. Atlas, D.R. Blake, and S.S. Brown, *Evaluating evidence for Cl sources and oxidation chemistry in a coastal, urban environment*. Atmos. Chem. Phys. Discuss., 2013. **13**(5): p. 13685-13720.
106. Riedel, T.P., G.M. Wolfe, K.T. Danas, J.B. Gilman, W.C. Kuster, J.A. de Gouw, D.M. Bon, A. Vlasenko, S.-M. Li, E.J. Williams, B.M. Lerner, P.R. Veres, J.M. Roberts, J.S. Holloway, B. Lefer, S.S. Brown, and J.A. Thornton, *An MCM modeling study of nitryl chloride (CINO<sub>2</sub>) impacts on oxidation, ozone production and nitrogen oxide partitioning in polluted continental outflow*. Atmos. Chem. Phys. Discuss., 2013. **13**: p. 28973-29006.

## Published

105. Hagen, C.L., B.C. Lee, I.S. Franka, J.L. Rath, T.C. VandenBoer, J.M. Roberts, S.S. Brown, and A.P. Yalin, *Cavity ring-down spectroscopy sensor for detection of hydrogen chloride*. Atmos. Meas. Tech., 2014. **7**(2): p. 345-357.
104. Washenfelder, R.A., J.M. Flores, C.A. Brock, S.S. Brown, and Y. Rudich, *Broadband measurements of aerosol extinction in the ultraviolet spectral region*. Atmos. Meas. Tech., 2013. **6**: p. 861-877.
103. Wagner, N.L., T.P. Riedel, C.J. Young, R. Bahreini, C.A. Brock, W.P. Dubé, S. Kim, A.M. Middlebrook, F. Öztürk, J.M. Roberts, R. Russo, B. Sive, R. Swarthout, J.A. Thornton, T.C. VandenBoer, Y. Zhou, and S.S. Brown, *N<sub>2</sub>O<sub>5</sub> uptake coefficients and nocturnal NO<sub>2</sub> removal rates determined from ambient wintertime measurements*. J. Geophys. Res., 2013. **118**(16): p. 9331-9350.
102. Vicars, W.C., S. Morin, J. Savarino, N.L. Wagner, J. Erblund, E. Vince, J.M.F. Martins, B.M. Lerner, E.J. Williams, and S.S. Brown, *Spatial and diurnal variability in reactive nitrogen oxide chemistry as reflected in the isotopic composition of atmospheric nitrate: Results from the CalNex 2010 field study*. J. Geophys. Res., 2013. **118**(18): p. 10567-10588.
101. VandenBoer, T.C., S.S. Brown, J.G. Murphy, W.C. Keene, C.J. Young, A.A.P. Pszenny, S. Kim, C. Warneke, J. de Gouw, J.R. Maben, N.L. Wagner, T.P. Riedel, J.A. Thornton, D.E. Wolfe, W.P. Dubé, F. Öztürk, C.A. Brock, N. Grossberg, B. Lefer, B.M. Lerner, A.M. Middlebrook, and J.M. Roberts,

- Understanding the role of the ground surface in HONO vertical structure: High resolution vertical profiles during NACHTT-11.* J. Geophys. Res., 2013. **118**(17): p. 10155-10171.
100. Riedel, T.P., N.L. Wagner, W.P. Dubé, A.M. Middlebrook, C.J. Young, F. Öztürk, R. Bahreini, T.C. VandenBoer, D.E. Wolfe, E.J. Williams, J.M. Roberts, S.S. Brown, and J.A. Thornton, *Chlorine activation within urban and power plant plumes: vertically resolved  $CINO_2$  and  $Cl_2$  measurements from a tall tower in a polluted continental setting.* J. Geophys. Res., 2013. **118**(15): p. 8702-8715.
99. Öztürk, F., R. Bahreini, N.L. Wagner, W.P. Dubé, C.J. Young, S.S. Brown, C.A. Brock, I.M. Ulbrich, J.L. Jimenez, O.R. Cooper, and A.M. Middlebrook, *Vertically resolved chemical characteristics and sources of sub-micron aerosols in a suburban area near Denver, Colorado in winter.* J. Geophys. Res., 2013. **118**: p. 13591-13605.
98. McQuaid, J., H. Schlager, M.D. Andrés-Hernández, S.M. Ball, A. Borbon, S.S. Brown, V. Catoire, P. Di Carlo, T.G. Custer, M. von Hobe, J. Hopkins, K. Pfeilsticker, T. Röckmann, A. Roiger, F. Stroh, J. Williams, and H. Ziereis, *In Situ Trace Gas Measurements, in Airborne Measurements for Environmental Research 2013*, Wiley-VCH Verlag GmbH & Co. KGaA. p. 77-155.
97. Huang, M., K.W. Bowman, G.R. Carmichael, B.P. R., H.M. Worden, M. Luo, O.R. Cooper, I.B. Pollack, T.B. Ryerson, and S.S. Brown, *Impact of Southern California anthropogenic emissions on ozone pollution in the mountain states: Model analysis and observational evidence from space.* Journal of Geophysical Research: Atmospheres, 2013. **118**(22): p. 12784-12803.
96. Fry, J.L., D.C. Draper, K.J. Zarzana, P. Campuzano-Jost, D.A. Day, J.L. Jimenez, S.S. Brown, R.C. Cohen, L. Kaser, A. Hansel, L. Cappellin, T. Karl, A. Hodzic Roux, A. Turnipseed, C. Cantrell, B. Lefer, and N. Grossberg, *Observations of gas- and aerosol-phase organic nitrates at BEACHON-RoMBAS 2011.* Atmos. Chem. Phys., 2013. **13**: p. 8585-8605.
95. Edwards, P.M., C.J. Young, K.C. Aikin, J.A. de Gouw, W.P. Dubé, F. Geiger, J. Gilman, D. Helmig, J.S. Holloway, J. Kercher, B. Lerner, R. Martin, R. McLaren, D.D. Parrish, J. Peischl, J.M. Roberts, T.B. Ryerson, J.A. Thornton, C. Warneke, E.J. Williams, and S.S. Brown, *Ozone photochemistry in an oil and natural gas extraction region during winter: Simulations of a snow-free season in the Uintah Basin, Utah.* Atmos. Chem. Phys., 2013. **13**: p. 8955-8971.
94. Dorn, H.P., R.L. Apodaca, S.M. Ball, T. Brauers, S.S. Brown, J.N. Crowley, W.P. Dubé, H. Fuchs, R. Häseler, U. Heitmann, R.L. Jones, A. Kiendler-Scharr, I. Labazan, J.M. Langridge, J. Meinen, T.F. Mentel, U. Platt, D. Pöhler, F. Rohrer, A.A. Ruth, E. Schlosser, G. Schuster, A.J.L. Shillings, W.R. Simpson, J. Thieser, R. Tillmann, R. Varma, D.S. Venables, and A. Wahner, *Intercomparison of  $NO_3$  radical detection instruments in the atmosphere simulation chamber SAPHIR.* Atmos. Meas. Tech., 2013. **6**: p. 1111-1140.
93. Chen, D., Q. Li, J. Stutz, Y. Mao, L. Zhang, O. Pikelnaya, J.Y. Tsai, C. Haman, B. Lefer, B. Rappenglück, S.L. Alvarez, J.A. Neuman, J. Flynn, J.M. Roberts, J.B. Nowak, J. de Gouw, J. Holloway, N.L. Wagner, P. Veres, S.S. Brown, T.B. Ryerson, C. Warneke, and I.B. Pollack, *WRF-Chem simulation of  $NO_x$  and  $O_3$  in the L.A. basin during CalNex-2010.* Atmos. Environ., 2013. **81**: p. 421-432.

92. Brown, S.S., N.L. Wagner, W.P. Dubé, and J.M. Roberts, *Heterogeneous Atmospheric Chemistry of Nitrogen Oxides: New Insights from Recent Field Measurements*, in *Disposal of Dangerous Chemicals in Urban Areas and Mega Cities*, I. Barnes and K.J. Rudziński, Editors. 2013, Springer: Dordrecht. p. 125-138.
91. Brown, S.S., J.A. Thornton, W.C. Keene, A.A.P. Pszenny, B.C. Sive, W.P. Dubé, N.L. Wagner, C.J. Young, T.P. Riedel, J.M. Roberts, T.C. VandenBoer, R. Bahreini, F. Öztürk, A.M. Middlebrook, S. Kim, G. Hübler, and D.E. Wolfe, *Nitrogen, Aerosol Composition and Halogens on a Tall Tower (NACHTT): Overview of a Wintertime Air Chemistry Field Study in the Front Range Urban Corridor of Colorado*. *J. Geophys. Res.*, 2013. **118**: p. 8067-8085.
90. Brown, S.S., W.P. Dubé, R. Bahreini, A.M. Middlebrook, C.A. Brock, C. Warneke, J.A. de Gouw, R.A. Washenfelder, E. Atlas, J. Peischl, T.B. Ryerson, J.S. Holloway, J.P. Schwarz, R. Spackman, M. Trainer, D.D. Parrish, F.C. Fehsenfeld, and A.R. Ravishankara, *Biogenic VOC oxidation and organic aerosol formation in an urban nocturnal boundary layer: Aircraft vertical profiles in Houston, TX*. *Atmos. Chem. Phys.*, 2013. **13**: p. 11317-11337.
89. Brioude, J., W.M. Angevine, R. Ahmadov, S.W. Kim, S. Evan, S.A. McKeen, E.Y. Hsie, G.J. Frost, J.A. Neuman, I.B. Pollack, J. Peischl, T.B. Ryerson, J. Holloway, S.S. Brown, J.B. Nowak, J.M. Roberts, S.C. Wofsy, G.W. Santoni, and M. Trainer, *Top-down estimate of surface flux in the Los Angeles Basin using a mesoscale inverse modeling technique: assessing anthropogenic emissions of CO, NO<sub>x</sub> and CO<sub>2</sub> and their impacts*. *Atmos. Chem. Phys.*, 2013. **13**: p. 3661-3677.
88. Young, C.J., R.A. Washenfelder, L.H. Mielke, H.D. Osthoff, P. Veres, A.K. Cochran, T.C. VandenBoer, H. Stark, J. Flynn, N. Grossberg, C.L. Haman, B. Lefer, J.B. Gilman, W.C. Kuster, C. Tsai, O. Pikelnaya, J. Stutz, J.M. Roberts, and S.S. Brown, *Vertically resolved measurements of nighttime radical reservoirs in Los Angeles and their contribution to the urban radical budget*. *Environ. Sci. Technol.*, 2012. **46**: p. 10965-10973.
87. Wagner, N.L., T.P. Riedel, J.M. Roberts, J.A. Thornton, W.M. Angevine, E.J. Williams, B.M. Lerner, A. Vlasenko, S.-M. Li, W.P. Dubé, D. Coffman, D. Bon, J. de Gouw, W.C. Kuster, J. Gilman, and S.S. Brown, *The sea breeze / land breeze circulation in Los Angeles and its influence on nitryl chloride production and air quality in this region*. *J. Geophys. Res.*, 2012. **116**: p. D00V24.
86. Riedel, T.P., T.H. Bertram, T.A. Crisp, E.J. Williams, B.M. Lerner, A. Vlasenko, S.-M. Li, J.B. Gilman, J. de Gouw, D.M. Bon, N.L. Wagner, S.S. Brown, and J.A. Thornton, *Nitryl chloride and molecular chlorine in the coastal marine boundary layer*. *Environ. Sci. Technol.*, 2012. **46**: p. 10463-10470.
85. Pollack, I.B., T.B. Ryerson, M. Trainer, D.D. Parrish, A. Andrews, E. Atlas, D. Blake, S.S. Brown, R. Commane, B.C. Daube, J.A. de Gouw, W.P. Dube, J. Flynn, G. Frost, J. Gilman, N. Grossberg, J. Holloway, J. Kofler, E.A. Kort, W.C. Kuster, P. Lang, B. Lefer, R. Lueb, J.A. Neuman, J.B. Nowak, P. Novelli, J. Peischl, A. Perring, J.M. Roberts, G. Santoni, J. Schwarz, J.R. Spackman, N.L. Wagner, C. Warneke, S.C. Wofsy, and B. Xiang, *Airborne and ground-based observations of a weekend effect in ozone, precursors, and oxidation products in the California South Coast Air Basin*. *J. Geophys. Res.*, 2012. **117**: p. D00V05.

84. Neuman, J.A., M. Trainer, K.C. Aikin, W.M. Angevine, J. Brioude, S.S. Brown, J.A. de Gouw, W.P. Dubé, M. Graus, J.H. Flynn, J. Holloway, B.L. Lefer, P. Nedelec, J.B. Nowak, D.D. Parrish, I.B. Pollack, J.M. Roberts, T.B. Ryerson, H. Smit, V. Thouret, and N.L. Wagner, *Ozone transport from the free troposphere to the Los Angeles Basin*. *J. Geophys. Res.*, 2012. **117**: p. D00V09.
83. Kahan, T.F., R.A. Washenfelder, V. Vaida, and S.S. Brown, *Cavity-enhanced measurements of hydrogen peroxide absorption cross sections from 353 to 410 nm*. *J. Phys. Chem.*, 2012. **116**: p. 5941-5947.
82. Fuchs, H., W.R. Simpson, R.L. Apodaca, T. Brauers, R.C. Cohen, J.N. Crowley, H.P. Dorn, W.P. Dubé, J.L. Fry, R. Häseler, Y. Kajii, A. Kiendler-Scharr, I. Labazan, J. Matsumoto, T.F. Mentel, Y. Nakashima, F. Rohrer, A.W. Rollins, G. Schuster, R. Tillmann, A. Wahner, P.J. Wooldridge, and S.S. Brown, *Comparison of  $N_2O_5$  mixing ratios during NO3Comp 2007 in SAPHIR*. *Atmos. Meas. Tech.*, 2012. **5**: p. 2763-2777.
81. Brown, S.S. and J. Stutz, *Nighttime Radical Observations and Chemistry*. *Chem. Soc. Reviews*, 2012. **41**: p. 6405-6447.
80. Brown, S.S., W.P. Dubé, P. Karamchandari, G. Yarwood, J. Peischl, T.B. Ryerson, J.A. Neuman, J.B. Nowak, J.S. Holloway, R.A. Washenfelder, C.A. Brock, G.J. Frost, M. Trainer, D.D. Parrish, F.C. Fehsenfeld, and A.R. Ravishankara, *The effects of  $NO_x$  control and plume mixing on nighttime chemical processing of plumes from coal-fired power plants*. *J. Geophys. Res.*, 2012. **117**: p. D07304.
79. Bahreini, R., A.M. Middlebrook, J.A. de Gouw, C. Warneke, M. Trainer, C.A. Brock, H. Stark, S.S. Brown, W.P. Dube, J.B. Gilman, K. Hall, J.S. Holloway, W.C. Kuster, A.E. Perring, A.S.H. Prevot, J.P. Schwarz, J.R. Spackman, S. Szidat, N.L. Wagner, R.J. Weber, P. Zotter, and D.D. Parrish, *Gasoline emissions dominate over diesel in formation of secondary organic aerosol mass*. *Geophys. Res. Lett.*, 2012. **39**(6): p. L06805.
78. Young, C.J., R.A. Washenfelder, and S.S. Brown, *Cavity Enhanced Spectroscopy: Applications, Theory and Instrumentation*, in *Encyclopedia of Analytical Chemistry*, M.W. Sigrist, Editor 2011, John Wiley & Sons: West Sussex, UK.
77. Washenfelder, R.A., C.J. Young, S.S. Brown, W.M. Angevine, E.L. Atlas, D.R. Blake, D.M. Bon, M.J. Cubinson, J.A. de Gouw, S. Dusanter, J. Flynn, J.B. Gilman, M. Graus, S. Griffith, N. Grossberg, P.L. Hayes, J.L. Jimenez, W.C. Kuster, B.L. Lefer, I.B. Pollack, T.B. Ryerson, H. Stark, P.S. Stevens, and M.K. Trainer, *The glyoxal budget and its contribution to organic aerosol for Los Angeles, California during CalNex 2010*. *J. Geophys. Res.*, 2011. **116**: p. D00V02.
76. Washenfelder, R.A., W.P. Dubé, N.L. Wagner, and S.S. Brown, *Measurement of atmospheric ozone by cavity ring-down spectroscopy*. *Environ. Sci. Technol.*, 2011. **45**: p. 2938-2944.
75. Wagner, N.L., W.P. Dubé, R.A. Washenfelder, C.J. Young, I.B. Pollack, T.B. Ryerson, and S.S. Brown, *Diode laser-based cavity ring-down instrument for  $NO_3$ ,  $N_2O_5$ ,  $NO$ ,  $NO_2$  and  $O_3$  from aircraft*. *Atmos. Meas. Tech.*, 2011. **4**: p. 1227-1240.
74. Stark, H., S.S. Brown, K.W. Wong, J. Stutz, C.D. Elvidge, I.B. Pollack, T.B.

- Ryerson, W.P. Dubé, N.L. Wagner, and D.D. Parrish, *City lights and urban air*. Nature Geosciences, 2011. **4**(11): p. 730-731.
73. Sommariva, R., S.S. Brown, J.M. Roberts, D.M. Brookes, A.E. Parker, P.S. Monks, T.S. Bates, D. Bon, W.H. Brune, J.A. de Gouw, G.J. Frost, J.B. Gilman, P.D. Goldan, S.C. Herndon, W.C. Kuster, B.M. Lerner, H.D. Osthoff, S.C. Tucker, C. Warneke, E.J. Williams, and M.S. Zahniser, *Ozone production in remote oceanic and industrial areas derived from ship based measurements of peroxy radicals during TexAQS 2006*. Atmos. Chem. Phys., 2011. **11**: p. 2471-2485.
72. Sommariva, R., T.S. Bates, D. Bon, D.M. Brookes, J.A. de Gouw, J.B. Gilman, S.C. Herndon, W.C. Kuster, B.M. Lerner, P.S. Monks, H.D. Osthoff, A.E. Parker, J.M. Roberts, S.C. Tucker, C. Warneke, E.J. Williams, M.S. Zahniser, and S.S. Brown, *Modelled and measured concentrations of peroxy radicals and nitrate radical in the U.S. Gulf Coast region during TexAQS 2006*. Journal of Atmospheric Chemistry, 2011. **68**(4): p. 331-362.
71. Fry, J.L., A. Kiendler-Scharr, A.W. Rollins, T. Brauers, S.S. Brown, H.P. Dorn, W.P. Dubé, H. Fuchs, A. Mensah, F. Rohrer, R. Tillmann, A. Wahner, P.J. Wooldridge, and R.C. Cohen, *SOA from limonene: role of NO<sub>3</sub> in its generation and degradation*. Atmos. Chem. Phys., 2011. **11**: p. 3879-3894.
70. Chang, W.L., P.V. Bhave, S.S. Brown, N. Riemer, J. Stutz, and D. Dabdub, *Heterogeneous Atmospheric Chemistry, Ambient Measurements, and Model Calculations of N<sub>2</sub>O<sub>5</sub>: A Review*. Aerosol Science and Technology, 2011. **45**: p. 655-685.
69. Brown, S.S., W.P. Dubé, J. Peischl, T.B. Ryerson, E. Atlas, C. Warneke, J. de Gouw, S. Te Lintel Hekkert, C.A. Brock, F. Flocke, M. Trainer, D.D. Parrish, F.C. Fehsenfeld, and A.R. Ravishankara, *Budgets for nocturnal VOC oxidation by nitrate radicals aloft during the 2006 Texas Air Quality Study*. J. Geophys. Res., 2011. **116**: p. D24305.
68. Begashaw, I., M.N. Fiddler, S. Bililign, and S.S. Brown, *Measurement of the fourth O-H overtone absorption cross section in acetic acid using cavity ring-down spectroscopy*. J. Phys. Chem. A., 2011. **115**: p. 753-761.
67. Axson, J.L., R.A. Washenfelder, T.F. Kahan, C.J. Young, V. Vaida, and S.S. Brown, *Absolute ozone absorption cross section in the Huggins Chappius minimum (350-470 nm) at 296 K*. Atmos. Chem. Phys., 2011. **11**: p. 11581-11590.
66. Thornton, J.A., J.P. Kercher, T.P. Riedel, N.L. Wagner, J. Cozic, J.S. Holloway, W.P. Dubé, G.M. Wolfe, P.K. Quinn, A.M. Middlebrook, B. Alexander, and S.S. Brown, *A large atomic chlorine source inferred from mid-continental reactive nitrogen chemistry*. Nature, 2010. **464**: p. 271-274.
65. Simon, H., Y. Kimura, G. McGaughey, D.T. Allen, S.S. Brown, D. Coffman, J.E. Dibb, H.D. Osthoff, P.K. Quinn, J.M. Roberts, G. Yarwood, S. Kemball-Cook, D. Byun, and D. Lee, *Modeling heterogeneous ClNO<sub>2</sub> formation, chloride availability, and chlorine cycling in Southeast Texas*. Atmos. Environ., 2010. **44**: p. 5476-5488.
64. Roberts, J.M., P. Veres, C. Warneke, J.A. Neuman, R.A. Washenfelder, S.S. Brown, M. Baasandorj, J.B. Burkholder, I.R. Burling, T.J. Johnson, R.J. Yokelson, and J. de Gouw, *Measurement of HONO, HNCO, and other inorganic acids by*

- negative-ion proton-transfer chemical-ionization mass spectrometry (NI-PT-CIMS): application to biomass burning emissions.* Atmos. Meas. Tech., 2010. **3**: p. 981-990.
63. Peischl, J., T.B. Ryerson, J.S. Holloway, D.D. Parrish, M. Trainer, G.J. Frost, K.C. Aikin, S.S. Brown, W.P. Dubé, H. Stark, and F.C. Fehsenfeld, *A top-down analysis of emission from selected East Texas power plants during TexAQS 2000 and 2006.* J. Geophys. Res., 2010. **115**: p. D16303.
62. Fuchs, H., S.M. Ball, B. Bohn, T. Brauers, R.C. Cohen, H.P. Dorn, W.P. Dubé, J.L. Fry, R. Häseler, U. Heitmann, R.L. Jones, J. Kleffmann, T.F. Mentel, P. Müsgen, F. Rohrer, A.W. Rollins, A.A. Ruth, A. Kiendler-Scharr, E. Schlosser, A.J.L. Shillings, R. Tillmann, R.M. Varma, D.S. Venables, G. Villena Tapia, A. Wahner, R. Wegener, P.J. Wooldridge, and S.S. Brown, *Intercomparison of measurements of NO<sub>2</sub> concentrations in the atmosphere simulation chamber SAPHIR during the NO3Comp campaign.* Atmos. Meas. Tech., 2010. **3**: p. 21-37.
61. Sommariva, R., H.D. Osthoff, S.S. Brown, T.S. Bates, T. Baynard, D. Coffman, J.A. de Gouw, P.D. Goldan, W.C. Kuster, B.M. Lerner, H. Stark, C. Warneke, E.J. Williams, F.C. Fehsenfeld, A.R. Ravishankara, and M. Trainer, *Radicals in the marine boundary layer during NEAQS 2004: a model study of day-time and night-time sources and sinks.* Atmos. Chem. Phys., 2009. **9**: p. 3075-3093.
60. Simon, H., Y. Kimura, G. McGaughey, D.T. Allen, S.S. Brown, H.D. Osthoff, J.M. Roberts, D. Byun, and D. Lee, *Modeling the Impact of ClNO<sub>2</sub> on Ozone Formation in the Houston Area.* J. Geophys. Res., 2009. **114**: p. D00F03.
59. Rollins, A.W., A. Kiendler-Scharr, J.L. Fry, T. Brauers, S.S. Brown, H.-P. Dorn, W.P. Dubé, H. Fuchs, A. Mensah, T.F. Mentel, F. Rohrer, R. Tillmann, R. Wegener, P.J. Wooldridge, and R.C. Cohen, *Isoprene oxidation by nitrate radical: alkyl nitrate and secondary organic aerosol yields.* Atmos. Chem. Phys., 2009. **9**: p. 6685-6703.
58. Roberts, J.M., H.D. Osthoff, S.S. Brown, and A.R. Ravishankara, *Laboratory studies of products of N<sub>2</sub>O<sub>5</sub> uptake on Cl<sup>-</sup> containing substrates.* Geophys. Res. Lett., 2009. **36**: p. L20808.
57. Osthoff, H.D., T.S. Bates, J.E. Johnson, W.C. Kuster, P.D. Goldan, R. Sommariva, E.J. Williams, B.M. Lerner, C. Warneke, J.A. de Gouw, A. Pettersson, T. Baynard, J.F. Meagher, F.C. Fehsenfeld, A.R. Ravishankara, and S.S. Brown, *Regional variation of dimethyl sulfide oxidation mechanism in the summertime marine boundary layer in the Gulf of Maine.* J. Geophys. Res., 2009. **114**: p. D07301.
56. Fuchs, H., W.P. Dubé, B.M. Lerner, N.L. Wagner, E.J. Williams, and S.S. Brown, *A sensitive and versatile detector for atmospheric NO<sub>2</sub> and NO<sub>x</sub> based on blue diode laser cavity ring-down spectroscopy.* Environ. Sci. Technol., 2009. **43**: p. 7831-7836.
55. Fry, J.L., A. Kiendler-Scharr, A.W. Rollins, P.J. Wooldridge, S.S. Brown, H. Fuchs, W.P. Dubé, A. Mensah, M. dal Maso, R. Tillmann, H.-P. Dorn, T. Brauers, and R.C. Cohen, *Organic nitrate and secondary organic aerosol yield from NO<sub>3</sub> oxidation of β-pinene evaluated using a gas-phase kinetics/aerosol partitioning model* Atmos. Chem. Phys., 2009. **9**: p. 1431-1449.
54. Feierabend, K.J., J.E. Flad, S.S. Brown, and J.B. Burkholder, *HCO Quantum*

- Yields in teh Photolysis of HC(O)C(O)H (Glyoxal) between 290 and 420 nm.* J. Phys. Chem. A., 2009. **113**: p. 7784-7794.
53. Brown, S.S., W.P. Dubé, H. Fuchs, T.B. Ryerson, A.G. Wollny, C.A. Brock, R. Bahreini, A.M. Middlebrook, J.A. Neuman, E. Atlas, M. Trainer, F.C. Fehsenfeld, and A.R. Ravishankara, *Reactive uptake coefficients for N<sub>2</sub>O<sub>5</sub> determined from aircraft measurements during TexAQS 2006; Comparison to current model parameterizations.* J. Geophys. Res., 2009. **114**: p. D00F10.
52. Brown, S.S., J.A. de Gouw, C. Warneke, T.B. Ryerson, W.P. Dubé, E. Atlas, R.J. Weber, R.E. Peltier, J.A. Neuman, J.M. Roberts, A. Swanson, F. Flocke, S.A. McKeen, J. Brioude, R. Sommariva, M. Trainer, F.C. Fehsenfeld, and A.R. Ravishankara, *Nocturnal isoprene oxidation over the Northeast United States in summer and its impact on reactive nitrogen partitioning and secondary organic aerosol.* Atmos. Chem. Phys., 2009. **9**: p. 3027-3042.
51. Washenfelder, R.A., A.O. Langford, H. Fuchs, and S.S. Brown, *Measurement of glyoxal using an incoherent broadband cavity enhanced absorption spectrometer.* Atmos. Chem. Phys., 2008. **8**: p. 7779-7793.
50. Stark, H., M. Aldener, S.S. Brown, J.B. Burkholder, V. Riffault, T. Gierczak, and A.R. Ravishankara, *Vibrational Overtones of Peroxynitric Acid (HO<sub>2</sub>NO<sub>2</sub>): Absorption Cross Sections for the Second and Third OH overtones and production of HO<sub>2</sub> from photolysis.* J. Phys. Chem., 2008. **112**: p. 9296-9303.
49. Roberts, J.M., H.D. Osthoff, S.S. Brown, and A.R. Ravishankara, *N<sub>2</sub>O<sub>5</sub> Oxidizes Chloride to Cl<sub>2</sub> in Acidic Atmospheric Aerosol.* Science, 2008. **321**: p. 1059.
48. Osthoff, H.D., J.M. Roberts, A.R. Ravishankara, E.J. Williams, B.M. Lerner, R. Sommariva, T.S. Bates, D. Coffman, P.K. Quinn, J.E. Dibb, H. Stark, J.B. Burkholder, R.K. Talukdar, J.F. Meagher, F.C. Fehsenfeld, and S.S. Brown, *High levels of nitryl chloride in the polluted subtropical marine boundary layer.* Nature Geosciences, 2008. **1**: p. 324-328.
47. Fuchs, H., W.P. Dubé, S.J. Ciciora, and S.S. Brown, *Determination of Inlet Transmission and Conversion Efficiencies for in Situ Measurements of the Nocturnal Nitrogen Oxides, NO<sub>3</sub>, N<sub>2</sub>O<sub>5</sub> and NO<sub>2</sub>, via Pulsed Cavity Ring-Down Spectroscopy.* Anal. Chem., 2008. **80**(15): p. 6010-6017.
46. Stark, H., S.S. Brown, P.D. Goldan, M. Aldener, W.C. Kuster, R. Jakoubek, F.C. Fehsenfeld, J. Meagher, T.S. Bates, and A.R. Ravishankara, *Influence of the nitrate radical on the oxidation of dimethyl sulfide in a polluted marine environment.* J. Geophys. Res., 2007. **112**(D10): p. D10S10.
45. Osthoff, H.D., M.J. Pilling, A.R. Ravishankara, and S.S. Brown, *Temperature dependence of the NO<sub>3</sub> absorption cross section above 298 K and determination of the equilibrium constant for NO<sub>3</sub> + NO<sub>2</sub> - N<sub>2</sub>O<sub>5</sub> at atmospherically relevant conditions.* Phys. Chem. Chem. Phys., 2007. **9**: p. 5785-5793.
44. Brown, S.S., W.P. Dubé, H.D. Osthoff, D.E. Wolfe, W.M. Angevine, and A.R. Ravishankara, *High resolution vertical distributions of NO<sub>3</sub> and N<sub>2</sub>O<sub>5</sub> through the nocturnal boundary layer.* Atmos. Chem. Phys., 2007. **7**: p. 139-149.
43. Brown, S.S., W.P. Dubé, H.D. Osthoff, J. Stutz, T.B. Ryerson, A.G. Wollny, C.A. Brock, C. Warneke, J.A. de Gouw, E. Atlas, J.A. Neuman, J.S. Holloway, B.M. Lerner, E.J. Williams, W.C. Kuster, P.D. Goldan, W.M. Angevine, M. Trainer, F.C. Fehsenfeld, and A.R. Ravishankara, *Vertical profiles in NO<sub>3</sub> and N<sub>2</sub>O<sub>5</sub> measured*

- from an aircraft: Results from the NOAA P-3 and surface platforms during NEAQS 2004.* J. Geophys. Res., 2007. **112**: p. D22304.
42. Baynard, T., E.R. Lovejoy, A. Pettersson, S.S. Brown, D. Lack, H. Osthoff, P. Massoli, S. Ciciora, W.P. Dube, and A.R. Ravishankara, *Design and application of a pulsed cavity ring-down aerosol extinction spectrometer for field measurements.* Aerosol Science and Technology, 2007. **41**(4): p. 447-462.
41. Osthoff, H.D., R. Sommarvia, T. Baynard, A. Pettersson, E.J. Williams, B.M. Lerner, J.M. Roberts, H. Stark, P.D. Goldan, W.C. Kuster, T.S. Bates, D. Coffman, A.R. Ravishankara, and S.S. Brown, *Observations of daytime N<sub>2</sub>O<sub>5</sub> in the marine boundary layer during New England Air Quality Study - Intercontinental Transport and Chemical Transformation 2004.* J. Geophys. Res., 2006. **111**(D23): p. D23S14.
40. Osthoff, H.D., S.S. Brown, T.B. Ryerson, T.J. Fortin, B.M. Lerner, E.J. Williams, A. Pettersson, T. Baynard, W.P. Dube, S.J. Ciciora, and A.R. Ravishankara, *Measurement of atmospheric NO<sub>2</sub> by pulsed cavity ring-down spectroscopy.* J. Geophys. Res., 2006. **111**: p. D12305.
39. Neuman, J.A., *Reactive nitrogen transport and photochemistry in urban plumes over the North Atlantic Ocean.* J. Geophys. Res., 2006. **111**: p. D23S54.
38. Flad, J.E., S.S. Brown, J.B. Burkholder, H. Stark, and A.R. Ravishankara, *Absorption cross sections for the A<sup>2</sup>A''(0,9<sup>0</sup>,0) - X<sup>2</sup>A'(0,0<sup>1</sup>,0) band of the HCO radical.* Phys. Chem. Chem. Phys., 2006. **8**: p. 3636-3642.
37. Feierabend, K.J., D.K. Havey, S.S. Brown, and V. Vaida, *Experimental absolute intensities of the 4v<sub>9</sub> and 5v<sub>9</sub> O-H stretching overtones of H<sub>2</sub>SO<sub>4</sub>.* Chem. Phys. Lett., 2006. **420**: p. 438-442.
36. Dubé, W.P., S.S. Brown, H.D. Osthoff, M.R. Nunley, S.J. Ciciora, M.W. Paris, R.J. McLaughlin, and A.R. Ravishankara, *Aircraft instrument for simultaneous, in-situ measurements of NO<sub>3</sub> and N<sub>2</sub>O<sub>5</sub> via cavity ring-down spectroscopy.* Rev. Sci. Instr., 2006. **77**: p. 034101.
35. Brown, S.S., T.B. Ryerson, A.G. Wollny, C.A. Brock, R. Peltier, A.P. Sullivan, R.J. Weber, J.S. Holloway, W.P. Dubé, M. Trainer, J.F. Meagher, F.C. Fehsenfeld, and A.R. Ravishankara, *Variability in nocturnal nitrogen oxide processing and its role in regional air quality.* Science, 2006. **311**: p. 67-70.
34. Brown, S.S., J.A. Neuman, T.B. Ryerson, M. Trainer, W.P. Dubé, J.S. Holloway, C. Warneke, J.A. de Gouw, S.G. Donnelly, E. Atlas, B. Matthew, A.M. Middlebrook, R. Peltier, R.J. Weber, A. Stohl, J.F. Meagher, F.C. Fehsenfeld, and A.R. Ravishankara, *Nocturnal odd-oxygen budget and its implications for ozone loss in the lower troposphere.* Geophys. Res. Lett., 2006. **33**: p. L08801.
33. Aldener, M., S.S. Brown, H. Stark, E.J. Williams, B.M. Lerner, W.C. Kuster, P.D. Goldan, P.K. Quinn, T.S. Bates, and F.C. Fehsenfeld, *Reactivity and loss mechanisms of NO<sub>3</sub> and N<sub>2</sub>O<sub>5</sub> in a marin environment: results from in-situ measurements during NEAQS 2002.* J. Geophys. Res., 2006. **111**(D23): p. D23S73.
32. Brown, S.S., H.D. Osthoff, H. Stark, W.P. Dube, T.B. Ryerson, C. Warneke, J.A. de Gouw, A.G. Wollny, D.D. Parrish, F.C. Fehsenfeld, and A.R. Ravishankara, *Aircraft observations of daytime NO<sub>3</sub> and N<sub>2</sub>O<sub>5</sub> and their implications for tropospheric chemistry.* J. Photochem. and Photobiol. A, 2005. **176**(1-3): p. 270-

- 278.
31. Aldener, M., S.S. Brown, H. Stark, J.S. Daniel, and A.R. Ravishankara, *Near-IR absorption of water vapor: Pressure dependence of lines strengths and an upper limit for continuum absorption*. *J. Mol. Spec.*, 2005. **232**: p. 223-230.
  30. Warneke, C., J.A. de Gouw, P.D. Goldan, W.C. Kuster, E.J. Williams, B.M. Lerner, S.S. Brown, H. Stark, M. Aldener, A.R. Ravishankara, J.M. Roberts, M. Marchewka, S. Bertman, D.T. Sueper, S.A. McKeen, J.F. Meagher, and F.C. Fehsenfeld, *Comparison of day and nighttime oxidation of biogenic and anthropogenic VOCs along the New England coast in summer during New England Air Quality Study 2002*. *J. Geophys. Res.*, 2004. **109**: p. D10309.
  29. Pettersson, A., E.R. Lovejoy, C.A. Brock, S.S. Brown, and A.R. Ravishankara, *Measurement of aerosol optical extinction at 532 nm with pulsed cavity ring down spectroscopy*. *J. Aerosol Sci.*, 2004. **35**: p. 995-1011.
  28. Brown, S.S., J.E. Dibb, H. Stark, M. Aldener, M. Vozella, S. Whitlow, E.J. Williams, B.M. Lerner, R. Jakoubek, A.M. Middlebrook, J.A. DeGouw, C. Warneke, P.D. Goldan, W.C. Kuster, W.M. Angevine, D.T. Sueper, P.K. Quinn, T.S. Bates, J.F. Meagher, F.C. Fehsenfeld, and A.R. Ravishankara, *Nighttime removal of NO<sub>x</sub> in the summer marine boundary layer*. *Geophys. Res. Lett.*, 2004. **31**: p. L07108.
  27. McCabe, D.C., S.S. Brown, M.K. Gilles, R.K. Talukdar, I.W.M. Smith, and A.R. Ravishankara, *Kinetics of the Removal of OH (v=1) and OD (v=1) by HNO<sub>3</sub> and DNO<sub>3</sub> from 253 to 383 K*. *J. Phys. Chem. A.*, 2003. **107**: p. 7762-7769.
  26. Brown, S.S., H. Stark, T.B. Ryerson, E.J. Williams, D.K.J. Nicks, M. Trainer, F.C. Fehsenfeld, and A.R. Ravishankara, *Nitrogen oxides in the nocturnal boundary layer: Simultaneous, in-situ detection of NO<sub>3</sub>, N<sub>2</sub>O<sub>5</sub>, NO, NO<sub>2</sub> and O<sub>3</sub>*. *J. Geophys. Res.*, 2003. **108**(D9): p. 4299.
  25. Brown, S.S., H. Stark, and A.R. Ravishankara, *Applicability of the Steady-State Approximation to the Interpretation of Atmospheric Observations of NO<sub>3</sub> and N<sub>2</sub>O<sub>5</sub>*. *J. Geophys. Res.*, 2003. **108**(D17): p. 4539.
  24. Brown, S.S., *Absorption Spectroscopy in High-Finesse Cavities for Atmospheric Studies*. *Chem. Rev.*, 2003. **103**: p. 5219-5238.
  23. Talukdar, R.K., E.J. Dunlea, S.S. Brown, J.S. Daniel, and A.R. Ravishankara, *Kinetics of O<sub>2</sub>(1S<sub>g</sub><sup>+</sup>) Reaction with H<sub>2</sub> and an Upper Limit for OH Production*. *J. Phys. Chem.*, 2002. **106**(36): p. 8461-8470.
  22. Brown, S.S., H. Stark, and A.R. Ravishankara, *Cavity ring-down spectroscopy for atmospheric trace gas detection: Application to the nitrate radical (NO<sub>3</sub>)*. *Appl. Phys. B.*, 2002. **75**: p. 173-182.
  21. Brown, S.S., H. Stark, S.J. Ciciora, R.J. McLaughlin, and A.R. Ravishankara, *Simultaneous in-situ detection of atmospheric NO<sub>3</sub> and N<sub>2</sub>O<sub>5</sub> via cavity ring-down spectroscopy*. *Rev. Sci. Instr.*, 2002. **73**(9): p. 3291-3301.
  20. Brown, S.S., H. Stark, S.J. Ciciora, and A.R. Ravishankara, *In-situ measurement of atmospheric NO<sub>3</sub> and N<sub>2</sub>O<sub>5</sub> via cavity ring-down spectroscopy*. *Geophys. Res. Lett.*, 2001. **28**(17): p. 3227-3230.
  19. Brown, S.S., J.B. Burkholder, R.K. Talukdar, and A.R. Ravishankara, *Reaction of hydroxyl radical with nitric acid: Insights into its mechanism*. *J. Phys. Chem.*, 2001. **105**(9): p. 1605-1614.

18. Brown, S.S., R.W. Wilson, and A.R. Ravishankara, *Absolute Intensities for Third and Fourth Overtone Absorptions in HNO<sub>3</sub> and H<sub>2</sub>O<sub>2</sub> Measured by Cavity Ring Down Spectroscopy*. J. Phys. Chem., 2000. **104**(21): p. 4976-4983.
17. Brown, S.S., A.R. Ravishankara, and H. Stark, *Simultaneous Kinetics and Ring-down: Rate Coefficients from Single Cavity Loss Temporal Profiles*. J. Phys. Chem., 2000. **104**(30): p. 7044-7052.
16. Portmann, R.W., S.S. Brown, T. Gierczak, R.K. Talukdar, J.B. Burkholder, and A.R. Ravishankara, *Role of nitrogen oxides in the lower stratosphere: a reevaluation based on laboratory studies*. Geophys. Res. Lett., 1999. **26**(15): p. 2387-2390.
15. Gao, R.-S., D.W. Fahey, L.A. DelNegro, S.G. Donnelly, E.R. Keim, J.A. Neuman, L. Teverovski, P.O. Wennberg, T.F. Hanisco, E.J. Lazendorf, M.H. Proffitt, J. Margitan, J.C. Wilson, J.W. Elkins, R.M. Stimpfle, R.C. Cohen, C.T. McElroy, T.P. Bui, R.J. Salawitch, S.S. Brown, A.R. Ravishankara, R.W. Portman, M.K.W. Ko, D.K. Weisenstein, and P.A. Newman, *A comparison of observations and model simulations of the NO<sub>x</sub>/NO<sub>y</sub> ratio in the lower stratosphere*. Geophys. Res. Lett., 1999. **26**(8): p. 1153-1156.
14. Brown, S.S., R.K. Talukdar, and A.R. Ravishankara, *Reconsideration of the rate constant for the reaction of OH with HNO<sub>3</sub>*. J. Phys. Chem., 1999. **103**(16): p. 3031-3037.
13. Brown, S.S., R.K. Talukdar, and A.R. Ravishankara, *Rate Constants for the Reaction OH + NO<sub>2</sub> + M → HNO<sub>3</sub> + M under Atmospheric Conditions*. Chem. Phys. Lett., 1999. **299**: p. 277 - 284.
12. Berghout, H.L., S.S. Brown, R. Delgado, and F.F. Crim, *Nonadiabatic effects in the photodissociation of vibrationally excited HNCO: The branching between singlet (a 1D) and triplet (X 3S-) NH*. J. Chem. Phys., 1998. **109**(6): p. 2257-2263.
11. Brown, S.S., H.L. Berghout, and F.F. Crim, *Raman spectroscopy of the n<sub>1</sub> N-H stretch fundamental in isocyanic acid (HNCO): State mixing probed by photoacoustic spectroscopy and by photodissociation of vibrationally excited states*. J. Chem. Phys., 1997. **106**(14): p. 5805-5815.
10. Brown, S.S., H.L. Berghout, and F.F. Crim, *Initial State Resolved Electronic Spectroscopy of HNCO: Stimulated Raman Preparation of Initial States and Photofragment Detection*. J. Chem. Phys., 1997. **107**(21): p. 8985-8993.
9. Brown, S.S., H.L. Berghout, and F.F. Crim, *Raman spectroscopy of the N-C-O symmetric and antisymmetric stretch fundamentals in isocyanic acid (HNCO)*. J. Chem. Phys., 1997. **107**(23): p. 9764-9771.
8. Brown, S.S., R.B. Metz, H.L. Berghout, and F.F. Crim, *Vibrationally mediated photodissociation of isocyanic acid (HNCO): Preferential N-H bond fission by excitation of the reaction coordinate*. J. Chem. Phys., 1996. **105**(15): p. 6293-6303.
7. Brown, S.S., C.M. Cheatum, D. Fitzwater, and F.F. Crim, *A Simple Model of the HNCO ('A') Excited State Potential Energy Surface and a Classical Trajectory Analysis of the Vibrationally Directed Bond-Selected Photodissociation*. J. Chem. Phys., 1996. **105**(24): p. 10911-10918.
6. Brown, S.S., H.L. Berghout, and F.F. Crim, *The internal energy distribution of the NCO fragment from the near threshold photolysis of isocyanic acid, HNCO*. J.

- Phys. Chem., 1996. **100**(19): p. 7948-7955.
- 5. Brown, S.S., H.L. Berghout, and F.F. Crim, *The HNCO Heat of Formation and the N-H and C-N Bond Enthalpies from Initial State Selected Photodissociation*. J. Chem. Phys., 1996. **105**(18): p. 8103-8110.
  - 4. Scott, J.L., D. Luckhaus, S.S. Brown, and F.F. Crim, *Overtone spectroscopy of the hydroxyl stretch vibration in hydroxylamine ( $NH_2OH$ )*. J. Chem. Phys., 1995. **102**(2): p. 675-679.
  - 3. Brown, S.S., H.L. Berghout, and F.F. Crim, *Vibrational state controlled bond cleavage in the photodissociation of isocyanic acid (HNCO)*. J. Chem. Phys., 1995. **102**(21): p. 8440-8447.
  - 2. Brown, S.S. and C.L. Braun, *Rotational currents as a measure of excited-state dipole moments*. J. Phys. Chem., 1991. **95**(2): p. 511-515.
  - 1. Braun, C.L., S.N. Smirnov, S.S. Brown, and T.W. Scott, *Picosecond transient absorption-measurements of geminate electron-cation recombination*. J. Phys. Chem., 1991. **95**(14): p. 5529-5532.